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The
Viascope
Special

"THE LATEST AND BEST
MOVING PICTURE MACHINE"

VIASCOPE
TRADE MARK REGISTERED

32

PATENT OFFICE
REGISTERED COMMERCIAL NO.
PATENT NO. 1,111,111

Catalogue

of

Viascope Moving Picture Machines

Lamps, Lamp Houses, Fire-Proof
Magazines, Take-Up Devices,
Stereopticons and Accessories



Manufactured by

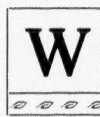
Viascope Manufacturing Company

112 E. Randolph Street

Chicago, Ill.

Local and Long Distance Telephone
Randolph 1385

INTRODUCTION.



WHEN the first moving picture theatres were opened three years ago, few people dreamed that in such a short time the moving picture business would increase to its present splendid proportions. Two men realized the possibilities in this new field and even before the first 5-cent theatres were opened, they had invented a moving picture machine which they called THE VIASCOPE. The moving picture machines used at first were crude and inefficient and the pictures shown were unsteady and indistinct. When the first 5-cent theatres were opened, it was seen that the first model Viascopes would not stand the awful wear and tear of the ten to fourteen hours' continuous grind, and rather than put an inferior article on the market, the inventors started to reconstruct the machine. They strengthened every weak part so that the users of the Viascope could depend upon having a machine that would not break down and have to be sent to the factory for repairs every few weeks.

Since that time the changes in the Viascope have not been radical, but tend to strengthen and simplify the machine. The parts which have shown a tendency to wear

out the quickest have been made stronger. This is especially true of the pins which carry the film down. They are now made of the finest steel, hardened after the pins are formed, and are interchangeable. An unsteady picture with a Viascope machine is caused nine times out of ten by worn out pins. It is well to have a supply of pins on hand so that when they show signs of wear, they can be replaced immediately by the operator.

It took years of study and experimenting to eliminate the undesirable features of the first Viascope, to substitute better features for the poorer and to improve upon the good ones, but at last a perfect moving picture machine was evolved. **THAT PERFECT MOVING PICTURE MACHINE IS OUR NEW VIASCOPE SPECIAL.** From the first our aim has been to produce a machine that will stand the hardest kind of usage and at the same time show a perfectly steady and flickerless picture. Our aim has been realized, and we are proud of the result, **THE VIASCOPE SPECIAL.**

TERMS.

Cash with order or C. O. D. on receipt of a remittance to cover express charges both ways.

Remit in Chicago Exchange only, in the form of postoffice or express money order, Chicago draft, certified check or currency in a registered letter.

Shipments weighing less than 100 pounds will be sent by express and larger shipments by freight unless otherwise ordered. All orders should be accompanied by full shipping instructions.

All transportation charges must be paid by the customer. Goods are at customer's risk from the time shipment is delivered to the transportation company. We are not responsible for breakage in transit nor for delivery of goods sent by mail. ALL claims for shortage MUST be made within two days after receipt of goods.

If you have an account with us, we will be pleased to charge goods on your order, or if we do not know you, you can have the benefit of our credit terms if you will give satisfactory references.

OUR GUARANTEE.

We guarantee the Viascope Special to show a steadier and more nearly flickerless picture, to outwear, to cause smaller repair bills and to give better results in every respect than any other moving picture machine on the market today. We also guarantee the machine forever against any defects in material or workmanship.

MR. BUYER:

When you are looking around for a moving picture machine, the initial cost of the outfit is a minor consideration. The running expense is the vital point, and anything that will tend to cut down expenses and at the same time show the best results is a matter for your careful consideration. An outfit that will run week in and week out without breaking down is the cheapest outfit in the long run. Our Viascope has been proved to be the most economical moving picture machine on the market. The first cost of the Viascope is slightly greater than the cost of other machines, but by the end of the first season you would have saved many times over the difference in cost between our machine and any other. The second and each succeeding year would show a proportionately greater saving. The Viascope Special is very simple in construction. There is nothing to get out of order or out of adjustment. If any of the parts get broken or wear out, it is not necessary to send the machine back to the factory for repairs. We will send the parts to you, and any operator can replace the old ones and adjust the new parts without the least trouble.

The Viascope Special is always ready for use without a lot of adjustment. When the day's work is done, the operator does not have to overhaul the machine and get it ready for the next day's business, nor does he have to get down to the theatre an hour or two before opening time to get it in working order. Operators who have once used the Viascope are spoiled for using other machines, for there is so little work about it in comparison with others. The Viascope is so constructed that if anything goes wrong it will give enough notice so that it will not be necessary to stop the show for a whole evening or for even five minutes. Nothing is more annoying to a manager than to have to apologize and perhaps return the admission price to an audience when the machine breaks down. To our knowledge, it has never been necessary for managers using the Viascope to give back money because the machine failed to do its duty.

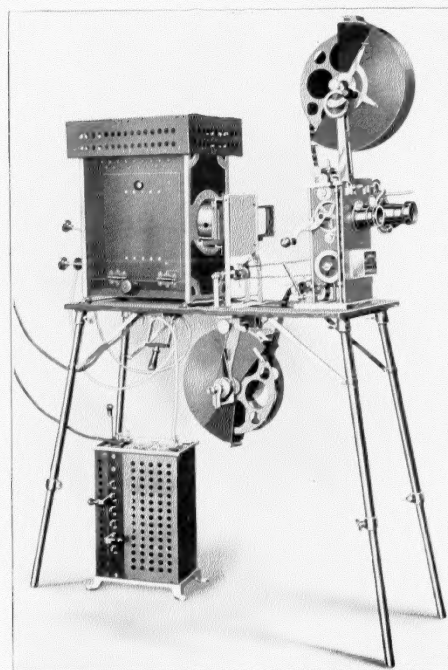


PLATE I.

VIASCOPE SPECIAL OUTFIT E WITH STAND.

THE VIASCOPE SPECIAL HEAD.

On the opposite page are cuts showing the front and back views of the Viascope Special Head. The finish of the head is unusually artistic. Nearly all of the parts exposed to view are handsomely nickel plated. The materials used in the construction of the machine are the best and most durable to be had. The gears are made of the finest bronze and are placed on tool steel shafts and best quality of gray iron bearings. The parts of the cam movement are made of especially hardened tool steel.

The movement operates under a single cam action which is a decided improvement over other intermittent movements. Having but one cam lessens the vibration because there are fewer parts to get out of adjustment. A single cam action machine is much easier to adjust and easier to keep in order than any other kind.

Some people are prejudiced against a pin movement because they claim that it damages the film. Such a prejudice is unwarranted. We are willing to put the Viascope Special alongside of any intermittent movement projecting machine, or any other moving picture machine for that matter, for a week, a month or a year and are willing to stake our reputation as successful moving picture machine manufacturers that our machine will cause less damage to film than any other machine. Only twice during the movement of the film through the machine does the film come in contact with any part of the movement. These two parts are the upper sprocket wheel and the pins. Our Viascope Special has but one sprocket wheel, for our experience has taught us that the more sprocket wheels you use, the greater the liability of injuring the film, either by scratching it or by running it off the sprocket. When the take-up is used it is necessary to add another sprocket to the machine, as it requires a loop at the bottom to prevent the take-up from drawing the film from the movement.

In framing a picture on the Viascope Special, the shutter remains stationary at all times with the framing

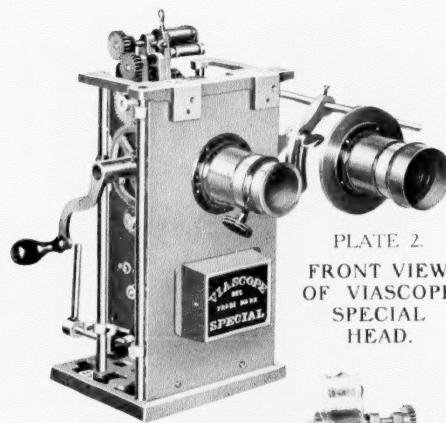


PLATE 2.
FRONT VIEW
OF VIASCOPE
SPECIAL
HEAD.

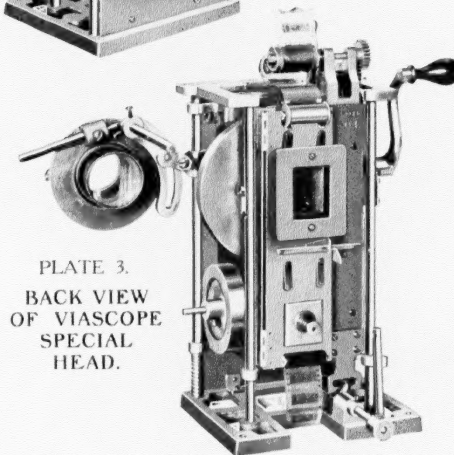
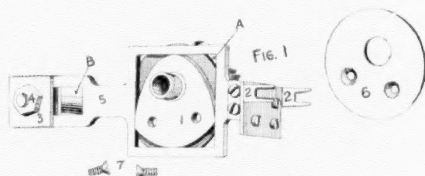


PLATE 3.
BACK VIEW
OF VIASCOPE
SPECIAL
HEAD.

plate and lens. This enables us to use a much smaller shutter than usual. The smaller the shutter that is used, the better the illumination on the screen and the smaller the amount of wasted light.

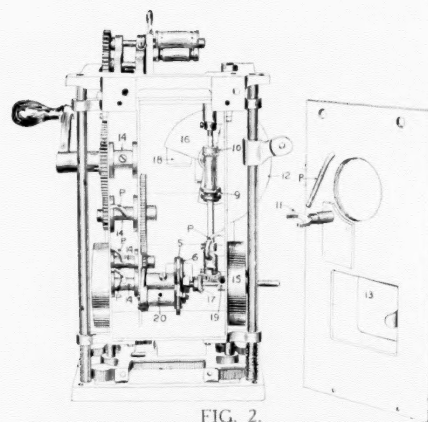
All of the working parts of the Viascope Special are enclosed in a nickel-steel case so that they are absolutely protected from all dust and foreign matter.

We have inaugurated a unique system of oiling the machine. There are seven tubes leading from the outside frame to the main shafts and bearings. This eliminates all danger of operators injuring the machine by oiling same while in motion. These oil tubes reach all parts which are apt to need oil during a show. All other parts to be oiled are within easy reach. (See Fig. 2 Interior Mechanism, pp. 19, 20.)



VIEW OF SINGLE CAM ACTION OF VIASCOPE SPECIAL HEAD.

- 1 Single Cam.
- 2 Pins, showing their position on carrier.
- 3 Guides for the rear end of carrier plate.
- 4 Nuts for locking guides No. 3.
- 5 Carrier.
- 6 Washer to lock large cam and carrier together.
- 7 Screws to washer.
- A. & B. Places to put oil when oiling cam.

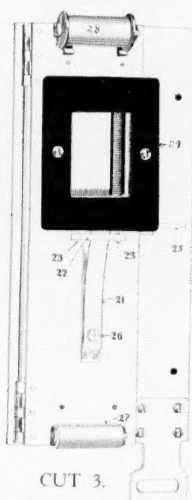


VIEW OF INTERIOR MECHANISM OF VIASCOPE SPECIAL HEAD.

- 9 Sleeve that holds shutter stationary with frame work and lens.
- 10 Mitre gear to shutter.
- 11 Fork that engages in sleeve (9).
- 12 Shutter guard outside of machine to protect shutter.
- 13 Door to get at movement.
- 14 Bearings. Can be removed and new ones inserted in their stead.
- 15 Fly wheels. One on each side of the machine. Having two fly wheels makes the machine more steady, hence a steadier picture is shown.
- 16 Shutter.
- 17 Mitre gear on cam shaft. Used to set shutter. By loosening screws in gear No. 17, shutter can be turned in any desired position.
- 18 Framing plate, opening for picture.

- 19 Oil hole inside of machine for oiling bearings near fly wheels which can not be reached by oil tubes.
 20 Oil hole for oiling slide block bearings.
 P Oil tubes leading from outside frame for oiling main bearings.

VIEW OF FILM GATE OF VIA- SCOPE SPECIAL.



Our Viascope has been used successfully in all of the leading amusement parks of Chicago:

Riverview Park,
 White City,
 Sans Souci Park,
 Forest Park,
 Luna Park.

- 21 Tension spring for adjusting long shoes which hold film, it being a single spring evens the tension on all four points of the shoes, giving the film an even tension for the entire length.
 22 Brace fastened to spring No. 21 to keep the tension on Pins No. 23.
 23 Lock nuts to adjust the shoes. When the shoes become worn, back the nuts up a little and allow more pressure on the film.
 24 Plate or shield used to keep the reflection of light from the operator's eyes. As the rest of the machine is highly polished nickel-plating, it would cause reflection without plate No. 24.
 25 Latch to lock door.
 26 Thumb nut for adjusting tension on spring No. 21.
 27 Lower door roller.
 28 Upper door roller.



The above is a cut showing the outside of Chicago's most elaborate and expensive moving picture theatre, The Orpheum, 176 State Street. The Viascope No. 4 machine was used in this theatre from the time of opening until Aug. 1, 1908, when they installed two Viascope Special Machines. They are in almost continual use from 9 o'clock in the morning till 12 o'clock at night. The management has found that the Viascope is the only machine that will stand this continual grind without getting out of order.

Other prominent Chicago theatres using Viascope Machines in preference to all others are:

Lyric Theatre, 252 State Street.
 Gem Theatre, 312 State Street.
 Bijou Dream, 178 State Street.
 Premier Theatre, 268 State Street.
 Royal Theatre, 288 State Street.
 Imperial Theatre, 308 State Street.
 Comique Theatre, 206 State Street.
 National Theatre, 362 State Street.
 Pastime Theatre, 109 East Madison Street.
 J. H. Ferris, 70 East Adams Street.

THE FIRE-PROOF FEATURE OF THE VIASCOPE SPECIAL.

We wish to call your especial attention to the fire-proof feature of the Viascope Special. The peculiar upper loop of film forms a perfect fire-preventive. If the machine were to stop or run too slowly, the film would catch fire at the framer plate and burn through not more than two pictures. The lower piece of film would be carried down by the pins and pass between the lower door rollers which would put the fire out and prevent any spark or blaze from entering the tank or take-up reel. The blaze from the upper part of the film would be extinguished in a similar way by the upper door rollers. On all other machines when the intermittent movement does not carry the film down, the upper sprocket feeds a big loop of film right into the rays of the condensers or against the lamp house and cause another and almost uncontrollable fire. On our Viascope Special, the peculiar threading causes the big loop of film to pass to the front of the machine and out of the way of all danger. If the film falls directly in the rays of the moving picture lens, the film would not catch fire again, as the heat from the condensers is absorbed between the film gate and the outer moving picture lens. We have tested this point thoroughly and although the film remained in front of the lens for one-half hour, it showed no sign of burning. Our upper magazine and lower take-up magazine are fitted with rollers at the openings which would prevent a blaze or spark from entering the magazine and destroying the film on the reels.

VIASCOPE SPECIAL HEAD.

SHOWING UPPER AND LOWER MAGAZINE AND TAKE-UP DEVICE.

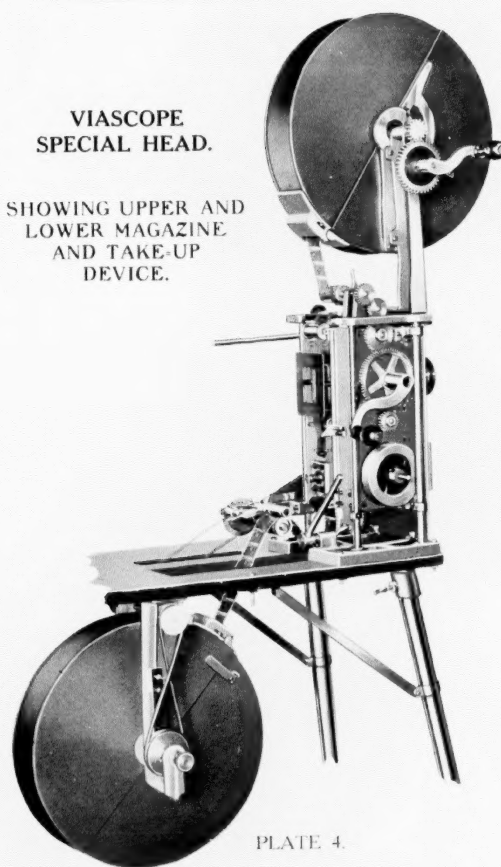


PLATE 4.

TAKE-UP ATTACHMENT TO VIASCOPE SPECIAL.

- 1 Tension roller to hold the film on the lower sprocket.
- 2 Screw to adjust the tension roller so that it does not bear too heavily on the sprocket. When the roller is set, tighten the nut to lock the screw tight.
- 3 Collar to set tension spring.
- 4 Pulley to drive the lower take-up mechanism.
- 5 & 6 Points where the take-up attachment is fastened to the machine.

LOWER TAKE-UP MECHANISM.

The lower magazine is circular in shape. The film is protected as it enters the magazine by rollers.

No. 1 shows the pins on the upper roller. The upper roller operates in a long slot, which enables it to play back and forth. It is made of solid steel and is heavy enough to fall against the film without using springs which are apt to break from the strain without warning.

No. 2 is the latch to keep the lower half of the magazine closed. To put a reel of film into the lower magazine, lift the latch and the lower part of the magazine will revolve into the upper part. Withdraw pin No. 6 and replace it after the reel is in position in the center of the magazine.

No. 3 is a thumb screw by which the tension on the friction disc No. 4 is regulated. By adjusting screw No. 3, more or less tension can be put on the reel while the machine is working.

No. 5 shows the clutch used to carry shaft No. 6 and the reel inside of the magazine. When rewinding the film on the upper reel, draw shaft No. 6 out so that the pin in Clutch No. 5 is disengaged from the tubular shaft. The reel will then run free without interfering with the adjustment of the tension on mechanism and the film can be easily rewound on the upper reel. After the film is wound back, slip pin No. 6 back into place.

PLATE 5. LOWER TAKE-UP MECHANISM.

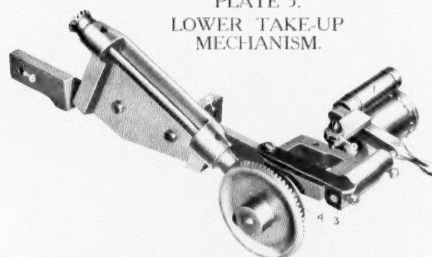
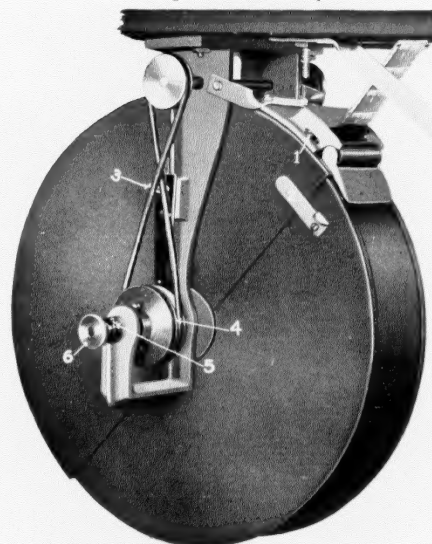


PLATE 6. Lower Magazine and Take-Up Device.



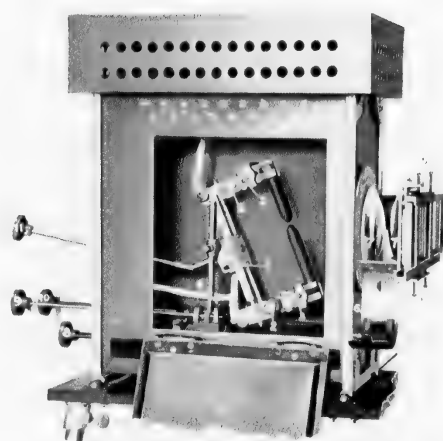


PLATE 7

LAMP HOUSE AND LAMP.

- No. 1. Adjustment for tilting the lamp.
- No. 2. Screws for adjusting the angle of the carbon holders.
- No. 3. Screws in lamp clamps to hold carbons in holders.
- No. 4. Screws to keep tension on the shaft when raising and lowering the lamp.
- No. 5. Screws for adjusting the slide carrier.
- No. 6. Door on Condenser Mounting.
- No. 7. Condensers.
- No. 8. Handle to move the lamp back and forward.
- No. 9. Handle to move the lamp up or down.
- No. 10. Handle to move the lamp to the right or left.
- No. 11. Handle to feed the carbons.
- No. 12. Latch on the door of the condenser mounting.

VIASCOPE LAMP HOUSE AND LAMP.

In building our Lamp House we have constantly had in mind the rigid fire insurance and city regulations for moving picture machines in Chicago and elsewhere. Our Lamp House is guaranteed to pass fire-inspection anywhere.

The Viascope Lamp House is unusually large and does not heat up as much as a smaller lamp house and for that reason would save the cost of the Lamp House in the saving on condenser breakage.

The Lamp House is made of pieces of high grade Planished steel, seamed and riveted together. There are heavy castings at the front and back, making it very rigid and solid. On the inside, the bottom and front half are lined with Transite Asbestos Board which makes it absolutely impossible to get a short circuit between the Lamp House and Lamp should the carbons strike any part of the Lamp House. The door has a piece of asbestos board between the steel linings which prevents the door from getting hot. The door is kept closed at all times by heavy spring hinges. Our Lamp House is unusually well ventilated. A substantial steel hood is fastened to the top of the Lamp House to prevent contact with any thing that might become ignited.

The front of the Lamp House is fitted with condenser mountings of a new and improved type. When you wish to put in new condensers, you do not need to unscrew anything to release the condensers. Simply lift catch No. 12, when the door is released and the condensers can be easily removed. (See No. 7 and No. 7). The condensers are held in place by a spring (No. 6) when the door is closed.

The slide carrier is fastened to the Lamp House by a casting in front of the condenser mounting. It can be moved up or down by adjusting screws No. 5 at the top and bottom of the slide carrier.

The bottom of the Lamp House is constructed to slide on $\frac{3}{8}$ -inch steel rods.

The back of the Lamp House is so made that the lamp can be adjusted easily. All of the adjusting handles are within easy reach of the operator. The operator can handle his light perfectly and bring his spot on any part of the screen without opening the Lamp House.

No. 8 shows the handle by which the lamp is drawn nearer to or farther from the condensers.

No. 9 shows the handle by which the lamp is raised or lowered. Our lamp can be moved up or down without tilting the lamp. This allows the arc to remain at the same angle with the condensers at all times.

No. 4 shows the screws which are used to keep the tension on the shaft when the lamp is raised or lowered.

No. 10 shows the handle by which the lamp is moved sideways. This is a decided advantage over the movement where it is necessary to move the Lamp House to the right or left to bring the spot right with the framer or to twist the lamp on the post, either of which methods tend to throw the arc away from the center of the condensers and prevents the showing of a clearly illuminated field on the screen.

No. 11 is the handle by which the carbon feed on the lamp is controlled.

The feed wires to the lamp pass through two porcelain bushings securely fastened to the Lamp House, one at the top and one at the bottom of the back. This makes the lamp easier to operate because there is no bending of wires when adjusting the lamp or feeding the carbons. It will be seen by the cut that the feed wires are fastened at the point of the lamp farthest away from the carbons. This keeps the wires from burning off of the lamp and cutting off the light. This is a big advantage to both the operator and manager as it is embarrassing, to say the least, to have to stop a show for five or ten minutes while the wires are being fixed. Our lamp is built to stand very heavy strains, carrying as many as 100 amperes.

The lamp is built of special metal which will stand an enormous amount of heat without crumbling like brass or

breaking like iron. It will wear much longer and stand harder usage than any other lamp made. The clamps for the carbon holders are made of this same special metal.

No. 2 and No. 3 are steel screws which are far better than the cast iron screws used on most lamps. They will stand an enormous lot of hard usage before giving out.

PETER J. SCHAEFER
Amusements

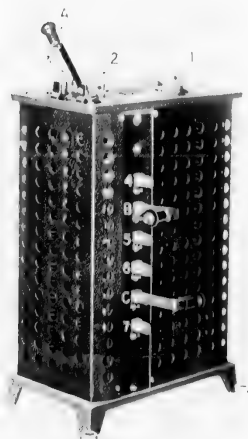
CHICAGO

Peter J. Schaefer

THE VIASCOPE ADJUSTABLE RHEOSTAT.

"VIASCOPE"

Trade Mark Registered



NO. 4 FOR 110 VOLTS, DIRECT CURRENT.

NO. 5 FOR ALTERNATING CURRENT, 100 TO
220 VOLTS.

A perfect resistance working on direct or alternating current, the coil unbroken, one piece of wire so arranged that it can be connected in series or multiple, with knife switches to increase the amperes from 10 to 60 amperes. Highest grade of Climax resistance is used. All switches are connected in shunt, making it impossible to form an arc in the rheostat when cutting out or adding more amperes.

LYRIC THEATRE

252 STATE STREET

CHICAGO, November 6th, 1907.

Dear Sir:

I have the pleasure to acknowledge the receipt of your letter of the 4th inst. regarding the repair of the Viascope Rheostat in the Lyric Theatre. I am sorry to hear that the machine is not working properly and I am sure that we will be able to get it in all that time my repair men will get it in shape. I will send you all machines and parts that I can get for you.

Sincerely,
C. J. Jones

DIRECTIONS TO CONNECT No. 5 RHEOSTAT.

Connected in series 2 and 3 with switch A open 110V. 10 amperes.

Connected in series 2 and 3 with switch A open 220V. 20 amperes.

Connected in series 1 and 2 with switch A open 110V. 20 amperes.

Connected in multiple 1 and 2 with switch A closed 110V. 40 amperes.

Adjustable switches in front of Rheostat to operate by closing switch B in lug 4 you cut in 5 amperes.

Adjustable switches in front of Rheostat to operate by closing switch B in lug 5 you cut in 10 amperes.

Adjustable switches in front of Rheostat to operate by closing switch C in lug 6 you cut in 15 amperes.

Adjustable switches in front of Rheostat to operate by closing switch C in lug 7 you cut in 20 amperes.

No. 4 VIASCOPE ADJUSTABLE RHEOSTAT.

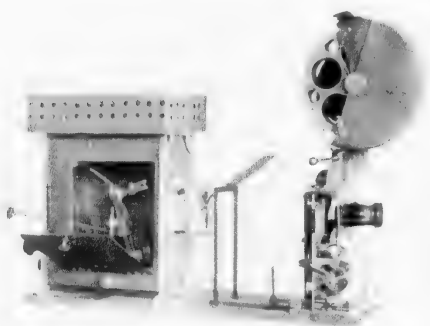
For 110 direct current with switches B and C, open 20 amperes by closing switch B in lug 4 you get 25 amperes.

For 110 direct current with switches B and C, open 20 amperes by closing switch B in lug 5 you get 30 amperes.

For 110 direct current with switches B and C, open 20 amperes by closing switch C in lug 6 you get 35 amperes.

For 110 direct current with switches B and C, open 20 amperes by closing switch C in lug 7 you get 40 amperes

MODEL No. 4 VIASCOPE.

PRICE LIST OF VIASCOPE
No. 4 OUTFITS.

Complete Viascope Outfit A. Including Viascope No. 4 Head; upper magazine, with rewinding attachment; lower magazine with take-up; Viascope lamp-house, with lamp; base board; light cut-off; improved condenser mounting, with best quality condensers; slide-carrier; stereopticon attachment, with lens; moving picture lens; No. 5 rheostat. \$165.00

Complete Viascope Outfit C. Same as Outfit A, but without upper or lower magazines. \$150.00

Complete Viascope Outfit B. Including Viascope No. 4 Head; upper magazine, with rewinding attachment; Via-

scope lamp-house, with lamp; base board; light cut-off; improved condenser mounting, with best quality condensers; slide-carrier; stereopticon attachment, with lens; moving picture lens; large galvanized iron box for running film into; No. 5 rheostat. \$150.00

Complete Viascope Outfit D. Same as Outfit B, but without large galvanized iron box. \$140.00

Same as Outfit D, but without upper magazine with upper reel holder. \$130.00

PRICE LIST OF VIASCOPE SPECIAL
OUTFITS.

Complete Viascope Outfit E. Including Viascope Special Head; upper magazine, with rewinding attachment; lower magazine with take-up; improved lamp-house, with Viascope lamp; base board; light cut-off; improved condenser mounting, with best quality condensers; slide-carrier; stereopticon attachment, with lens; moving picture lens No. 5 rheostat; Viascope stand. \$225.00

Complete Viascope Outfit F. Including Viascope Special Head; upper magazine, with rewinding attachment; improved lamp-house, with Viascope lamp; base board; light cut-off; improved condenser mounting, with best quality condensers; slide-carrier; stereopticon attachment, with lens; moving picture lens; large galvanized iron box for running film into; No. 5 rheostat. \$175.00

Complete Viascope Outfit G. Including Viascope Special Head; upper reel holder, with rewinding attachment; improved lamp-house, with Viascope lamp; base board; light cut-off; improved condenser mounting, with best quality condensers; slide-carrier; stereopticon attachment with lens; moving picture lens; lower take-up; No. 5 rheostat; Viascope stand. \$200.00

Complete Viascope Outfit H. Same as Outfit F, but without large galvanized iron box for running film into. \$165.00

Complete Viascope Outfit I. Same as Outfit G, but without lower take-up and stand. \$155.00

PRICE LIST OF VIASCOPE PARTS AND SUPPLIES.

Viascope No. 4 Head.....	\$ 75.00
" No. 4 Lower Magazine with take-up at- tachment	25.00
" No. 4 Take-up device	15.00
" No. 4 Stereopticon attachment	5.00
" Viascope Special head	100.00
" Upper magazine	12.00
" Upper magazine with rewinding attach- ment	15.00
" Lower magazine	12.00
" Lower magazine with take-up attach- ment	35.00
" No. 4 rheostat	15.00
" No. 5 rheostat	20.00
" Upper reel hanger with rewinding at- tachment	5.00
" Lower take-up device.....	25.00
" Improved lamp-house	20.00
" Lamp	12.00
Large galvanized iron box for running film into	10.00
Base board	2.00
Light cut-off	2.00
Viascope Automatic light cut-off	15.00
" Extra heavy stand....	15.00
" Stereopticon attachment	5.00
" Lamp-house movement	5.00
1,000 foot film reel	75
2,000 " " "	150
Magazine for 2,000 foot reel with re-winding at- tachment	20.00
Pins for Viascope Head..	25
Lamp clamps with screws...	35
" " without screws.....	30
Carbon holders, upper or lower.	150

Insulating arm for lamp	\$ 1.00
Carbon feed rack for lamp	75
Viascope sprockets	5.00
Upper door roller.....	1.50
Lower door roller.....	35
Tension shoes, per pair..	5.00
Condensers, each.....	75
Pure asbestos covered wire, No. 8, per foot	1.25
Film cement, per bottle..	25
Extension collar for lens, 3/8-inch	1.00
Graphitoleo, per tube	10

DIRECTIONS FOR ADJUSTING THE VIASCOPE.

For Oil: Oil holes are shown in Fig. 1, Nos. A. and B., and in Fig. 2, No. P, No. 19, No. 20.

Threading the Film: The Viascope threads differently than any other machine, in that the "loop" is formed on the projecting lens side of the upper sprocket. This is a very distinct advantage since in the case of the intermittent movement failing to feed the film by reason of missing sprocket holes or any other cause, the loop, instead of running right down into the light of the condensers, as it does on other machines, in the case of the Viascope Special, runs off on the projecting lens side where it could not possibly be set fire.

To thread The Viascope Special, set the pins at the bottom of the stroke and engage the sprocket holes on same. Draw the film up in the center of the track and close the gate. Pass the film back UNDER the sprocket and idler. Now hold the idler back about half an inch from the sprocket and pass the film over idler and back under the sprocket (between idler and sprocket). Now while still holding idler half an inch from sprocket, pull film tight

against idler and engage teeth of sprocket with film perforations. Close idler and your machine is ready to run.

To put a reel for film into the lower magazine: Lift the latch closing the magazine and the lower part of the magazine will revolve into the upper part. Withdraw the pin. Hold the reel central in the magazine and replace the pin.

To Thread Take-Up: Pass the film between the sprocket and idler, leaving a little slack between the sprocket and the gate. Carry the end of film into the magazine and attach to reel in the regular manner. To adjust tension of take-up, tighten or loosen screw No. 3, Plate 6. To rewind film into upper magazine, pull out spindle No. 6 from No. 5 so that the pin is free from clutch No. 5, when reel will be disconnected from take-up friction. To re-engage friction, press spindle No. 6 back into place.

To Rewind the Film from the Lower Magazine Into the Upper: Withdraw shaft No. 6 so that the pin in the clutch is disengaged from the tubular shaft. The reel will then run free and the film can be rewound easily. When the film is all rewound, slip pin No. 6 back into place.

To Set Shutter: Open door under projecting lens and to the right as you look in, will be seen two small bevel gears meshing into each other. The one on the horizontal shaft has two set screws in its hub. Loosen these and the shutter may be revolved at will. Now thread a piece of film on the machine and frame it up properly. Now with the fly wheel slowly turn the machine in the direction in which it runs until the dividing line between the pictures on the film is exactly half between the top and bottom of the picture opening; or to put it otherwise, until the dividing line is central in the picture opening. Now turn the shutter blade to the right (as you look into the picture opening) until the center of the shutter blade is opposite the dividing line of the picture and tighten screws in the hub of the bevel gear. The metal shutter guard on the left of the machine should be removed to facilitate the handling of the shutter and to enable one to mark the exact center of the shutter blade.

To Adjust the Tension Springs: The tension is provided by the broad, flat spring on the face of the film gate. This spring bears at the upper end on two small pins which connect through the gate with two long tension shoes on the inside of the gate. Tension is regulated by tightening or loosening the thumb screws on the face of the gate. On the small pins on which the main tension springs bear will be seen two locking nuts. In the course of time, the face of the tension shoes may wear off so much that you can no longer get sufficient tension, in which case these nuts should be backed up just a little to allow the shoes to set farther out.

To Renew Pins: Remove small plate below the picture opening and you will see pin plate (No. 2, Cut 1), held in place by four screws. Remove these screws, substitute new plate and set screws TIGHT.

CIRCLE OF ILLUMINATION. Successful results depend very much upon the adjustment of the lamp. The following illustration will enable one to quickly adjust the lamp under various conditions. After having focused the projection lens upon the screen, remove slide and slide holder and examine the illuminated circle upon the screen.

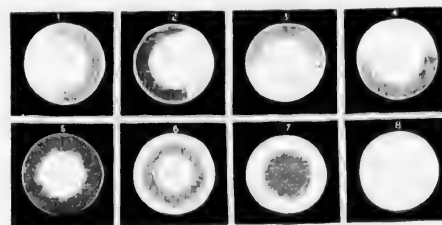
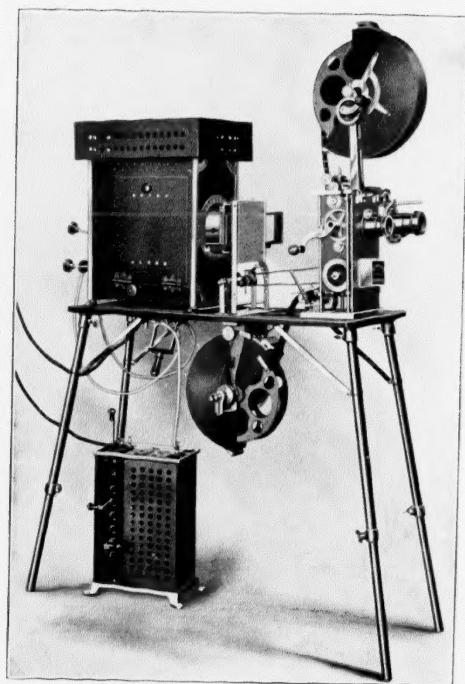


Fig. 1. The light is too far to the right.
 Fig. 2. The light is too far to the left.
 Fig. 3. The light is too high.
 Fig. 4. The light is too low.
 Fig. 5. The light is too far from the condensers.
 Figs. 6 and 7. The light is too near the condensers.
 Fig. 8. The light is in the correct position





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